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To	Kristen Durocher	Page 1
CC		
Subject	Review of Sampling Procedures for Second and Third Rivers.	

From	Ryan McCarthy and Donald Kretchmer
Date	March 26, 2013

Based on the conditions encountered in the field during the Small Volume Chemical Water Column Monitoring (SV CWCM) High Flow event conducted during late February/ early March 2013, and subsequent discussions with USEPA, it was concluded that the sampling methodologies employed in the tributaries to the Lower Passaic River need to be modified in order to reduce the risk to staff personnel while also satisfying the Data Quality Objectives (DQOs) specified in the SV CWCM QAPP (Rev. 3, July 2012).

Specifically, the sampling locations at the Second and Third Rivers necessitate that a person in waders physically enter the water, wade to mid-channel, and hold the sampling apparatus (tubing and YSI multi-parameter sonde) in order to collect water quality data and the sample itself. Due to the nature of the high flow sampling (collecting water samples on the rising limb and peak of the hydrograph any time of day), exposure to potentially unsafe conditions is likely as conditions in the tributaries can deteriorate quickly as flows rapidly increase.

Therefore, an alternate approach for sampling the Second and Third Rivers is proposed. A telescoping 20' fiberglass pole will be employed to extend the tubing towards the center of the channel. While the 20' pole may not extend to the middle of the channel, the new sampling approach does allow a more safe and reasonable protocol to be employed and eliminates the need for field team members to enter the water. The pole will be deployed in a location where the main flow of the stream can be sampled and will not be deployed in backwater or eddy areas. A length of line will be attached to a fixed point (e.g., a tree, fence, etc) on the opposite bank in order to provide additional support against the flow for the sampling array.

The sampling tubing will be mounted with zip ties to the fiberglass pole. A decontaminated, 8 lb. plastic coated lead weight will be attached to the sampling tubing (via a suitable length of line and electrical tape or zip ties) approximately 1 foot below the sampling inlet in order to keep the tubing submerged and suspended at mid-depth in the water column. The approximate depth of the tributary will be determined and the length of the line holding the weight will be shorter than the presumed depth. All reasonable attempts will be made to avoid having the weight make contact with the river bed (and thereby potentially stirring up sediments).

The pole will be anchored to the shoreline dependant on the conditions present at each sampling location. If there is a suitable fixed point for the pole to be attached to (e.g., a tree or fence), the pole will be tied off or lashed to the fixed point. If there is only flat ground available, then using re-bar, tent stakes, or a large weight (e.g., cinder blocks) the pole will be fixed to the ground using the most prudent and effective method.

The YSI sonde will not be attached to the sampling array as the drag created by the increased surface area will be too much for the pole to bear. The YSI sonde will be deployed from a nearby bridge or similar location as close to the sampling point as possible. Similar to the tubing, the YSI sonde will be suspended at mid-depth in the main flow of the stream.

Necessary Materials:

Fiberglass Rod
http://www.specialized.net/Specialized/BES-TPF620-Cable-Expansion-TelePole-620-3986.aspx#

8# Weight
http://www.cabelas.com/catalog/product.jsp?productId=737360&productVariantId=1214593&WT.tsrc=CSE&WT.mc_id=GoogleProductAds&WT.z_mc_id1=737360&rid=40&channel=GoogleBaseUSA&mr:trackingCode=910A7452-F5D2-DF11-82EF-001B21631C34&mr:referralID=NA&mr:adType=pla&mr:ad=25988358551&mr:keyword=&mr:match=&mr:filter=52254830831&gclid=CLfM0ZyAm7YCFQzhQgod1A0Aaw

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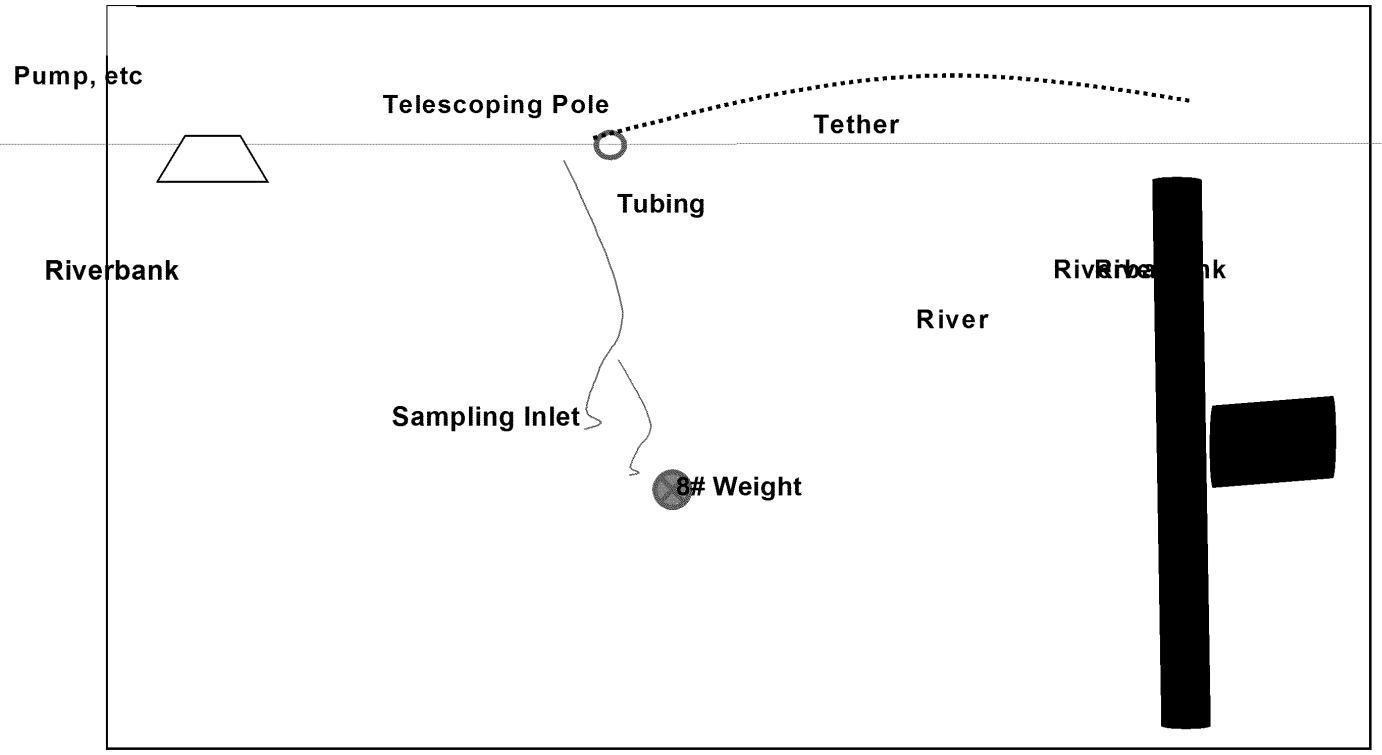

Figure 1. Cross Section View of New Sampling Method.

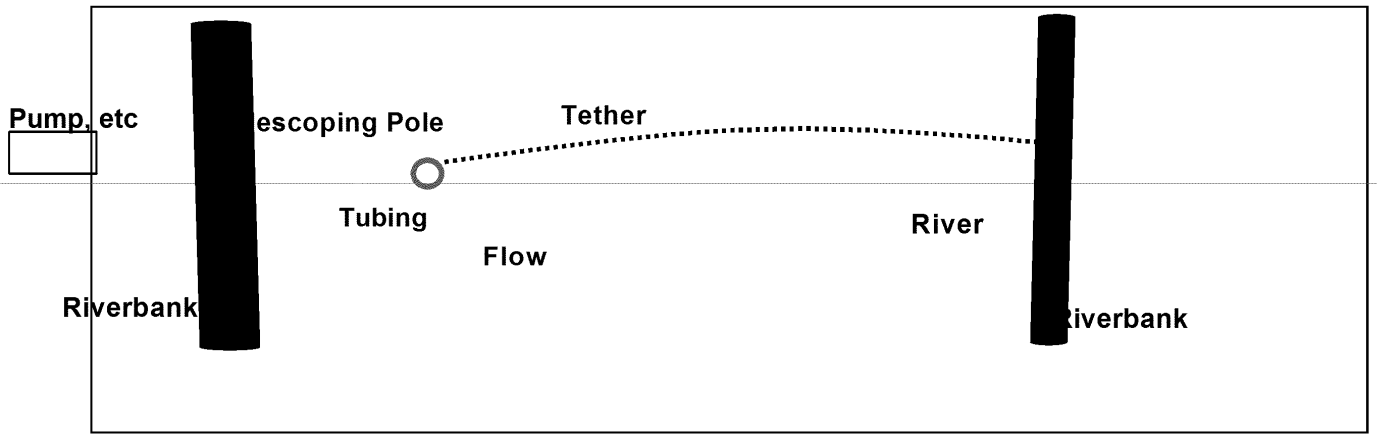

Figure 2. Plan View of New Sampling Method.